UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,763	02/20/2002	Haixiang He	57983.000067	3467

7590 11/22/2005

Thomas E. Anderson
Hunton & Williams
1900 K Street, N.W.
Washington, DC 20006-1109

EXAMINER	
PHILPOTT, JUSTIN M	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,763	HE, HAIXIANG	
	Examiner	Art Unit	
	Justin M. Philpott	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "100" described in the specification is not included in FIG. 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1, 4, 12 and 15 are objected to because of the following informalities: "aggregating receiver information for each multicast source system" (claim 1, lines 7-8) should be changed to "aggregating the receiver information for each multicast source system" since it appears that the receiver information at lines 7-8 is the same as the receiver information introduced in lines 5-6. Similarly, "receiver" (claim 4, line 1; claim 12, line 1) should be changed to "the receiver" for the same reason as discussed above regarding claim 1. Also, it

appears that "processor readable carrier" (claim 15, line 5) would be more clearly written as "processor-readable carrier". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 7, 14 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, these claims recite operating "according to a multicast source notification of interest protocol", and the specification does not clearly describe in such a way as to enable one skilled in the art as to what comprises, or how to implement, such a "multicast source notification of interest protocol". Clarification is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claim 8 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim does not fall within any of the four statutory classes of subject matter: process, machine, manufacture, or composition of matter.

Specifically, the claim recites a "computer signal ... encoding a computer program of instructions for executing a computer process ...", which is not a process, machine, manufacture, or composition of matter. The claimed signal is clearly not a "process" because it is not a series of steps. Also, the claimed signal has no tangible physical structure, does not perform any useful, concrete and tangible result and, thus, does not fit within the definition of a "machine". Further, the claimed signal is not a "manufacture" because the signal does not produce "articles for use from raw or prepared materials by giving these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery," Diamond v. Chakrabarty, 477 U.S. at 308, 206 USPQ at 196-97. Finally, the claimed signal is not a "composition of matter" because it does not cover "all compositions of two of more substances" including "all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). Thus, claim 8 does not fall within any of the four statutory classes of subject matter and is, accordingly, directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,614,787 to Jain et al.

Regarding claim 1, Jain teaches a method for multicasting a plurality of receiver membership reports containing receiver information for a plurality of multicast source systems (e.g., see col. 2, line 34-65), the method comprising the steps of: collecting receiver information (e.g., multicast registration information) for the plurality of multicast source systems (e.g., VLANs) (e.g., see col. 7, lines 26-54); aggregating the receiver information (e.g., registration information) for each multicast source system (e.g., VLAN) into a respective record (e.g., VID) (e.g., see col. 7, lines 26-54); and aggregating the plurality of respective records (e.g., VIDs) into a single message (e.g., aggregated VID within a database) (e.g., see col. 7, line 55 – col. 8, line 38).

While Jain may not specifically disclose multicasting the single message to a group address, Jain additionally teaches the database (comprising the aggregated VID) may be stored at various other locations (e.g., see col. 8, lines 23-27). Further, while Jain may not specifically disclose the aggregated VID, which would be stored within a database at each of these locations (e.g., see col. 8, lines 23-27), is multicasted to these various other locations, the general teachings of Jain are clearly directed towards multicasting (e.g., see abstract). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to transmit the aggregated VID from the intermediate device 202 comprising the database (e.g., see col. 8, lines 15-51) to these various other locations comprising a database (e.g., see col. 8, lines 23-27) via multicasting in order to provide a database (comprising the aggregated VID) at various other locations (e.g., see col. 8, lines 23-27), since the general teachings of Jain are clearly directed towards

multicasting (e.g., see abstract) and since multicasting is well known in the art for transmitting a common message to a plurality of locations.

Regarding claim 2, Jain teaches the step of aggregating receiver information (e.g., see col. 7, lines 26-54) further comprises the step of indexing each respective record using an address associated with each multicast source system (e.g., multicast registration information is tagged with a VID, see col. 7, lines 34-37).

Regarding claim 3, Jain teaches the address is an IP address of each multicast source system (e.g., see col. 7, lines 41-43 regarding IP multicast).

Regarding claim 4, Jain teaches the receiver information comprises a source identifier (e.g., port, see col. 7, lines 26-34), a multicast group (e.g., VLAN, see col. 7, lines 34-37), and a group record (e.g., implicitly within multicast registration, see col. 7, lines 29-34).

Regarding claim 5, Jain teaches the group record comprises one of Transmit and Hold (e.g., see col. 8, lines 15-38 and col. 11, lines 34-55 regarding tagged or untagged).

Regarding claim 6, Jain teaches the step of accessing a corresponding respective record from the single message (e.g., see col. 8, lines 15-51 regarding intermediate device accessing the aggregated ID comprising the VIDs); and enabling each multicast source system (e.g., VLAN) to respond (e.g., register with intermediate device, see col. 8, lines 39-51) based upon the receiver information (e.g., registration information) in each corresponding respective record (e.g., VID).

Regarding claim 7, Jain teaches operating according to a multicast source notification of interest protocol (e.g., see col. 7, lines 37-43 regarding Internet Group Management Protocol).

Regarding claim 8, Jain teaches a computer process performs the method discussed above regarding claim 1 (e.g., see col. 4, line 55 – col. 5, line 53 regarding computer system operations)

via a computing system (e.g., computer system) operating an encoded computer program of instructions (e.g., see col. 5, lines 5-7 regarding computer readable media and col. 6, lines 63-66 regarding computer executable instructions), implicitly comprising a computer signal embodied in a carrier wave as is known in the art (e.g., see col. 4, lines 5-53).

Regarding claim 9, Jain teaches a system for performing the method discussed above regarding claim 1, wherein the system comprises a plurality of multicast source systems (e.g., VLANs) for receiving information for (e.g., see col. 2, line 34-65), a router (e.g., intermediate device 202) for collecting receiver information (e.g., multicast registration information) for the plurality of multicast source systems (e.g., VLANs) (e.g., see col. 7, lines 26-54); aggregating the receiver information (e.g., registration information) for each multicast source system (e.g., VLAN) into a respective record (e.g., VID) (e.g., see col. 7, lines 26-54); and aggregating the plurality of respective records (e.g., VIDs) into a single message (e.g., aggregated VID within a database) (e.g., see col. 7, line 55 – col. 8, line 38).

While Jain may not specifically disclose multicasting the single message to a group address, Jain additionally teaches the database (comprising the aggregated VID) may be stored at various other locations (e.g., see col. 8, lines 23-27). Further, while Jain may not specifically disclose the aggregated VID, which would be stored within a database at each of these locations (e.g., see col. 8, lines 23-27), is multicasted to these various other locations, the general teachings of Jain are clearly directed towards multicasting (e.g., see abstract). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to transmit the aggregated VID from the intermediate device 202 comprising the database (e.g., see col. 8, lines 15-51) to these various other locations comprising a database (e.g., see col. 8, lines 23-27) via multicasting

in order to provide a database (comprising the aggregated VID) at various other locations (e.g., see col. 8, lines 23-27), since the general teachings of Jain are clearly directed towards multicasting (e.g., see abstract) and since multicasting is well known in the art for transmitting a common message to a plurality of locations.

Regarding claim 10, Jain teaches the router (e.g., intermediate device 202) indexes each respective record using an address associated with each multicast source system (e.g., multicast registration information is tagged with a VID, see col. 7, lines 34-37).

Regarding claim 11, Jain teaches the address is an IP address of each multicast source system (e.g., see col. 7, lines 41-43 regarding IP multicast).

Regarding claim 12, Jain teaches the receiver information comprises a source identifier (e.g., port, see col. 7, lines 26-34), a multicast group (e.g., VLAN, see col. 7, lines 34-37), and a group record (e.g., implicitly within multicast registration, see col. 7, lines 29-34).

Regarding claim 13, Jain teaches each multicast source system (e.g., VLAN) accesses a corresponding respective record from the single message (e.g., see col. 8, lines 15-51 regarding intermediate device accessing the aggregated ID comprising the VIDs) and responds (e.g., registers with intermediate device, see col. 8, lines 39-51) based upon the receiver information (e.g., registration information) in each corresponding respective record (e.g., VID).

Regarding claim 14, Jain teaches operating according to a multicast source notification of interest protocol (e.g., see col. 7, lines 37-43 regarding Internet Group Management Protocol).

Regarding claim 15, Jain teaches a method discussed above regarding claim 1 wherein the method is performed by an article of manufacture comprising: at least one processor-readable carrier (e.g., see col. 4, lines 5-53); and instructions carried on the at least one carrier

(e.g., see col. 5, lines 5-7 regarding computer readable media and col. 6, lines 63-66 regarding computer executable instructions); wherein the instructions are configured to be readable from the least one carrier by at least one processor (e.g., see col. 4, line 55 – col. 5, line 53 regarding computer system operations) and thereby cause the at least one processor to operate so as to: collect receiver information (e.g., multicast registration information) for the plurality of multicast source systems (e.g., VLANs) (e.g., see col. 7, lines 26-54); aggregate receiver information (e.g., registration information) for each multicast source system (e.g., VLAN) into a respective record (e.g., VID) (e.g., see col. 7, lines 26-54); and aggregate the plurality of respective records (e.g., VIDs) into a single message (e.g., aggregated VID within a database) (e.g., see col. 7, line 55 – col. 8, line 38).

While Jain may not specifically disclose multicasting the single message to a group address, Jain additionally teaches the database (comprising the aggregated VID) may be stored at various other locations (e.g., see col. 8, lines 23-27). Further, while Jain may not specifically disclose the aggregated VID, which would be stored within a database at each of these locations (e.g., see col. 8, lines 23-27), is multicasted to these various other locations, the general teachings of Jain are clearly directed towards multicasting (e.g., see abstract). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to transmit the aggregated VID from the intermediate device 202 comprising the database (e.g., see col. 8, lines 15-51) to these various other locations comprising a database (e.g., see col. 8, lines 23-27) via multicasting in order to provide a database (comprising the aggregated VID) at various other locations (e.g., see col. 8, lines 23-27), since the general teachings of Jain are clearly directed towards

multicasting (e.g., see abstract) and since multicasting is well known in the art for transmitting a common message to a plurality of locations.

Regarding claim 16, Jain teaches the at least one processor is further caused to operate so as to index each respective record using an address associated with each multicast source system (e.g., multicast registration information is tagged with a VID, see col. 7, lines 34-37).

Regarding claim 17, Jain teaches the address is an IP address of each multicast source system (e.g., see col. 7, lines 41-43 regarding IP multicast).

Regarding claim 18, Jain teaches the receiver information comprises a source identifier (e.g., port, see col. 7, lines 26-34), a multicast group (e.g., VLAN, see col. 7, lines 34-37), and a group record (e.g., implicitly within multicast registration, see col. 7, lines 29-34).

Regarding claim 19, Jain teaches the at least one processor is further caused to operate so as to access a corresponding respective record from the single message (e.g., see col. 8, lines 15-51 regarding intermediate device accessing the aggregated ID comprising the VIDs); and enable each multicast source system (e.g., VLAN) to respond (e.g., register with intermediate device, see col. 8, lines 39-51) based upon the receiver information (e.g., registration information) in each corresponding respective record (e.g., VID).

Regarding claim 20, Jain teaches operating according to a multicast source notification of interest protocol (e.g., see col. 7, lines 37-43 regarding Internet Group Management Protocol).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,839,348 to Tang et al., and U.S. Patent Application Publication

Nos. 2002/0196802 A1 by Sakov et al. and 2003/0012194 A1 by Novaes each disclose aggregate multicast messaging techniques.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on 571.272.3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Justin M Philpott

ALPUS H. HSU
PRIMARY EXAMINER